

PTSD in Primary Care: A Physician's Guide to Dealing with War-Induced PTSD

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1. Introduction

Posttraumatic stress disorder (PTSD), as defined in DSM IV-TR, is the most common and conspicuous psychiatric problem associated with the stress experienced by soldiers in combat yet it is often misunderstood even by frontline primary care providers. Diagnosis of PTSD requires exposure to a traumatic event that involves experiencing, witnessing, or being confronted by death or serious injury to self or others; a response of intense fear, helplessness, or horror; and development of a set of symptoms that persist for at least a month and cause significant impairment of functioning (American Psychiatric Association, 2000). Some factor analytic studies have demonstrated four basic dimensions of PTSD symptoms (e.g., King, Leskin, King, & Weathers, 1998): reexperiencing (e.g., nightmares, flashbacks), avoidance (e.g., efforts to avoid thinking about the trauma), numbing of general responsiveness (e.g., restricted range of affect), and hyperarousal (e.g., exaggerated startle response), but some suggest other complex relationships between symptoms (McWilliams, Cox, & Asmundson, 2005). Most individuals who develop chronic PTSD experience immediate distress that then persists over time (Buckley, Blanchard, & Hickling, 1996). However, a small but significant number of individuals reports increases in PTSD symptoms over time (delayed onset PTSD; Gray, Bolton, & Litz, 2004).

Current data suggest that approximately 5-20% of armed forces personnel deployed for combat, peacekeeping, or humanitarian disaster relief will develop PTSD following their tour of duty (Bramsen, Dirkzwager, & van der Ploeg, 2000; Litz et al., 1997; Mehlum & Weisaeth, 2002; Ward, 2002; Dohrenwend, Turner, Turse, Adams, Koenen, & Marshall, 2006; Tanielian & Jaycox, 2008). Current estimates for those serving in Iraq/Afghanistan run as high as 15% and while exposure to specific combat traumas are the single best predictor for the development of PTSD, service members who have experienced more lengthy and more frequent deployments are at the greatest risk (Tanielian & Jaycox, 2008).

In considering the problem of PTSD, it should also be acknowledged that problematic reactions to trauma are not limited to full-blown disorder. A considerable percentage (i.e., 10% - 25%) of those not meeting threshold diagnostic criteria for PTSD experience significant subsyndromal symptoms (e.g., Schlenger et al., 1999) that may require treatment.

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Subthreshold or partial PTSD is associated with significant levels of impairment of social, occupational, and family functioning (e.g., Stein, Walker, Hazen, & Forder, 1997; Weiss et al., 1992; Zlotnick et al., 2002; Yarvis et al., 2005), often similar to those reported in individuals with full PTSD (Stein et al., 1997). Those diagnosed with PTSD almost always experience concurrent additional mental health disorders, such as substance use disorder, other anxiety disorders, and major depressive disorder (e.g., Breslau, Davis, Peterson, et al., 2000; Helzer et al., 1987; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kulka et al., 1990).

Risk factors for development of PTSD include characteristics of the traumatic event itself, pre-trauma factors, and post-trauma factors. Event characteristics that increase the risk for chronic PTSD include type of trauma, greater amount of exposure, injury, involvement in atrocities, and perceived life threat (Engdahl et al., 1997; Green, Grace, Lindy, Gleser, & Leonard, 1990; D. W. King et al., 1996; Kulka et al., 1990; Wolfe, Erickson, Sharkansky, King, & King, 1999). Degree of exposure to potentially traumatic combat events during deployment is strongly associated with development of PTSD (Hoge et al., 2004). Military sexual trauma is more strongly associated with PTSD than premilitary or postmilitary sexual trauma (Himmelfarb, Yaeger, & Mintz, 2006) or other traumas (Yaeger, Himmelfarb, Cammack, & Mintz, 2006). In a sample of women veterans seeking treatment for stress disorders, sexual stress was found to be almost four times as influential in the development of PTSD as duty-related stress (Fontana & Rosenheck, 1998). In veterans, predisposing factors have included non-Caucasian ethnicity, lower intelligence or education, younger age at exposure, lower socioeconomic status, family problems in childhood, pre-trauma psychopathology, and childhood behavior problems (Engdahl, Dikel, Eberly, & Blank, 1997; D. W. King, King, Foy, & Gudanowske, 1996; Kulka et al., 1990; McNally & Shin, 1995). Post-event factors that predict chronic PTSD in veterans include low levels of social support, negative homecoming experiences, poor coping, and adverse life events post-trauma (Boscarino, 1995; Engdahl et al., 1997; Green et al., 1992; L. A. King, King, Fairbank, Keane, & Adams, 1998). While many risk factors exert a similar effect in military and civilian populations, trauma severity and post-trauma social support may be more important in military than in civilian samples (Brewin, Andrews, & Valentine, 2000).

2. Psychological theories of PTSD and treatment

Conceptions of the etiology of PTSD, both psychosocial and biological, have implications for the understanding of treatment. Many such theories have focused on the intense fear often experienced during traumatic experiences and the impact of fear on conditioned emotional reactions and encoding of traumatic memories.

Foa and Kozak (1986) suggest that there are two conditions for change in these problematic fear-related memories once they have been created: the fear structure must be activated, and there must be an incorporation of new information into the memory. Memory activation alone is insufficient for change; in fact, trauma memories are being activated frequently without benefit to the survivor, by nightmares, conversations, or trauma reminders. These experiences often increase fear for the person, or prompt maladaptive escape or avoidance behaviors. Dual Representation Theory (Brewin, Dalgleish, & Joseph, 1996) argues that activation of memories can lead not only to recovery but to chronic emotional processing (permanent preoccupation with consequences of trauma and intrusive memories), or to

premature inhibition of processing that results from avoidance and is associated with continued phobic avoidance, somatization, and vulnerability to reactivation later in life. When PTSD symptoms become chronic, this is thought to reflect a failure to engage in successful emotional processing of the traumatic experience. Avoidance limits activation of the memory and access to new, corrective information (Foa & Cahill, 2001).

Following this thinking, it is the job of the treatment provider to encourage conditions for change and reduce emotional avoidance. Deliberate therapeutic activation of traumatic memories is most directly attempted in exposure therapies that require the individual to repetitively talk about the trauma in detail and approach previously-avoided trauma-related stimuli. During effective treatment, therefore, avoidance is limited and new information of many kinds is purposefully incorporated into the memory. The individual learns that it is not dangerous to remember the trauma and experience strong emotions, that the memory can be remembered deliberately with a feeling of personal control and manageable physical reactions, that the trauma memory is not completely accurate and must be updated, and/or that some beliefs or judgments about the experience can be challenged and changed.

While most theories of PTSD emphasize the relationship of fear to the development of PTSD, combat and other deployment-related traumas often activate other intense emotions - including sadness, anger, and guilt - that can be connected with the development of PTSD and other post-trauma problems. In Operation Iraqi Freedom, for example, substantial percentages of Army and Marine Corps personnel reported experiencing potentially traumatic experiences that included not only events likely to be associated with fear (e.g., "being attacked or ambushed"), but also those related to loss (e.g., "knowing someone seriously injured or killed"), moral conflict (e.g., "being responsible for the death of a noncombatant"), horror (e.g., "handling or uncovering human remains"), or helplessness (e.g., "seeing ill or injured women or children whom you were unable to help") (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004). This range of experiences is associated with a range of intense emotions that can continue to trouble trauma survivors. Some of these emotions are fueled by negative interpretations or appraisals (e.g., of personal behavior during the trauma, or the effects of the trauma), so that it may be important to supplement exposure interventions with those explicitly designed to modify appraisals. The cognitive theory of PTSD emphasizes the "idiosyncratic negative appraisals of the traumatic event and/or its sequelae that have the common effect of creating a sense of serious current threat" (Ehlers & Clark, 2000, p. 320) and thus help to maintain acute stress reactions.

Generally, cognitive-behavioral psychological theories of PTSD and its treatment instruct that the trauma memory needs to be actively confronted, elaborated, and integrated into context of an individual's preceding and subsequent experience; that problematic appraisals that maintain sense of threat and other negative emotions need to be modified; and that dysfunctional coping strategies that prevent emotional processing of the trauma and thus recovery need to be reduced.

3. The process of treatment of deployment-related PTSD

Treatment of PTSD must depend upon a careful assessment of the individual and the formulation of a treatment plan that is based on judgments about the factors that may have caused problems for that particular person, those that maintain them, the co-occurring

problems of the person, and the priorities for intervention. Generally, however, and regardless of specific interventions, treatment of individuals with PTSD can be conceptualized as a temporal process, starting with engagement with the client and alliance building, and education about the nature of trauma, post-traumatic stress reactions, and the recovery process. This process often gradually moves into coping skills training and/or trauma-focused interventions, aspects of treatment that require greater commitment and involvement of the client. Finally, as treatment intensity is decreased, attention is focused on relapse prevention and maintenance of treatment gains.

Active engagement and alliance building. In order for treatment of PTSD to commence, individuals with PTSD must present for care. However, many are reluctant to seek mental health treatment, and those experiencing higher levels of symptoms may be less likely to seek help and report more barriers to help-seeking (Maguen & Litz, 2006). In an anonymous survey of four U.S. combat infantry units administered three to four months after their return from combat duty in Iraq or Afghanistan (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004), only 38 to 45 percent of individuals whose responses met criteria for a mental health disorder indicated an interest in receiving help, and only 23 to 40 percent reported having received professional help in the past year. Those screening positive for disorder were twice as likely to report concern about being stigmatized and about other barriers to seeking mental health services. In this study, barriers to help-seeking included concern about being seen as weak, feelings of embarrassment, and concern about reactions from leadership. For some, another barrier to seeking treatment for PTSD within a Veterans Healthcare Administration (VHA) or Department of Defense (DoD) setting is fear that documentation of PTSD-related problems in the medical record might have an adverse effect on advancement in a military career or later employment in some occupations (e.g., police).

Initial presentation does not necessarily result in active involvement in the treatment process. The importance of this issue is highlighted by clinical experience with OIF returnees one and two years after their return to the United States. In VHA settings, many veterans come to one or two sessions of treatment but do not begin active participation in counseling services. In fact, once an individual presents for help, clinicians must take steps to maintain attendance and achieve active engagement in the treatment process. It is important to assess for obstacles to participation and make efforts to ensure that treatment makes sense to the individual and is perceived as relevant to his or her needs.

Ongoing assessment and monitoring of treatment effectiveness. Assessment of military-related PTSD requires a multi-method approach in which multiple measures are used to assess different domains of functioning, both to improve diagnostic confidence and identify multiple targets for intervention (e.g., Keane, Street, & Stafford, 2004). Here, a few key issues can be identified. First, it is important for the provider to gather information about the individual's experiences during deployment. Use of self-report questionnaires such as the Deployment Risk and Resilience Inventory (King, King, Vogt, Knight, & Samper, 2006) can make this process more complete and efficient for provider and patient. Second, findings of high rates of lifetime physical and sexual victimization among veterans in treatment for chronic PTSD (Lapp, Bosworth, Strauss, Stechuchak, Horner, Calhoun, Meador, Lipper, & Butterfield, 2005) support the need for routine assessment of history of trauma exposure; adverse childhood experiences are strongly associated with mental health symptoms

(Cabrera, Hoge, & Bliese, 2007) and predict the presence of PTSD and depression among active duty soldiers seeking mental health services (Gahm & Lucenko, 2008). Third, it is important that clinicians engage in ongoing assessment/monitoring of treatment impact. While this is not currently routine practice in many treatment settings, it is important to help provider and survivor evaluate the effectiveness of their work together, and make changes when necessary. The Clinical Practice Guideline for PTSD jointly developed by the Veterans Healthcare Administration and the Department of Defense (VA-DoD Clinical Practice Guideline Working Group, 2003) recommends routine use of validated self-administered checklists (and interviews as appropriate) at intake and to monitor follow-up status (at least every 3 months).

Ongoing interactive education. Patient education comprises a basic component of most forms of psychotherapy for PTSD, and should be introduced early and continued throughout all stages of the treatment process. Although education alone is unlikely to result in remission of PTSD, it is important to build commitment to treatment participation and help the survivor more clearly understand his or her own experience and how to actively participate in treatment (Gray, Elhai, & Frueh, 2004).

Coping skills training. There is a great difference between knowing what to do versus knowing how to do it. Skills training methods are designed to help individuals learn and practice what to do to cope more effectively with the various kinds of situations that challenge them. Skills training methods are commonly used to help those suffering with PTSD to increase their ability to reduce anxiety, communicate with loved ones, manage anger, and respond assertively (not aggressively) to conflict situations. Through a cycle of instruction, demonstration, rehearsal/practice, feedback/coaching, and more practice, survivors learn skills in treatment sessions and practice them in the natural environment. They keep written records of their attempts to apply the skills, which help them learn and provide practitioner and survivor with real-world experiences to review. Clinical experience indicates that survivors are typically attracted to the idea of learning skills ("tools") for coping. The methods of skills training help to actively involve the survivor in treatment, provide him or her with a greater sense of control (and responsibility for active participation in treatment), and strengthen the transfer of what is learned in treatment to the natural environment of the client.

Deliberate, planned confrontation of trauma memories and reminders. The core element of PTSD treatment is active discussion and exploration of traumatic experiences and their implications. The treatments that focus explicitly on traumatic memories and meanings – PE, CT, and EMDR - have received the most empirical support to date, and comprise three of the four "strongly recommended" treatments in the VA-DOD Practice Guideline.

Methods of direct therapeutic exposure involve the most direct confrontation of memories and reminders. Imaginal exposure involves a repeated retelling of the trauma story with emotional activation. *In vivo* exposure adds real-world exposure to stimuli associated with the trauma via confrontation of avoided trauma-related stimuli in the natural environment. These procedures involve multiple repetitions via assignments to listen to a cassette recording of the trauma narrative, write about the experience, or approach real-world trauma reminders systematically in between-session tasks. A combination of imaginal and *in vivo* exposure, to include virtual-reality exposure therapy, is thought to be more effective than either procedure alone (Rizzo, Reger, Gahm, Difede & Rothbaum, 2009). According to

Foa and Jaycox (1999), PE treatment assists the individual in incorporating new information into the memory, by reducing cognitive avoidance of trauma-related feelings, demonstrating that remembering the experience is not dangerous and that anxiety will diminish via habituation, fostering discrimination between the trauma and similar non-traumatic situations, strengthening ability to tolerate memories and thereby challenging perceptions of personal incompetence, and reviewing details of the experience that provide evidence against disabling beliefs about danger and incompetence.

Exposure to trauma memories is an element of a number of treatments other than PE that are supported in the research literature. For example, individuals being treated with Cognitive Processing Therapy (Resick & Schnicke, 1993) are asked to write out the details of their traumatic experience and to read their account on a regular basis. EMDR includes an exposure component, in that it involves bringing to mind an image of a traumatic event while visually tracking a therapist's finger as it moves back and forth in front of the patient's visual field (or tracking a light moving back and forth, or listening to tones alternating from one ear to the other).

Challenging of negative trauma-related thoughts. Cognitive therapy is a systematic approach that includes education about the role of beliefs in causing distress; identification of distressing beliefs held by the individual; discussion and a review of evidence for and against the beliefs; generation of alternative beliefs; and rehearsal of new, more adaptive beliefs. Thoughts that create significant distress (e.g., trauma-related guilt, exaggerated thoughts about danger) are replaced with more realistic and self-supportive thoughts. For example, if an individual has the thought "I will never be safe again, the world is a very dangerous place," cognitive therapy might focus on helping the individual to consider evidence for and against the belief and move toward a more realistic appraisal (e.g., "I am safe in most situations and the chances of harm coming to me are quite small in the civilian world"). It is often important that trauma-related guilt be made a formal target of PTSD treatment.

Negative thoughts can be challenged through direct review of the belief and consideration of alternatives, and through encouraging real-world experiences that can help to disconfirm them. For example, having a successful experience in disclosing personal information to another person can help challenge the belief that "other people cannot be trusted." Successful implementation of PE can also result in modification of distressing trauma-related cognitions, by disconfirming beliefs ("anxiety stays forever" or "I will go crazy") and helping the survivor differentiate the trauma from similar but safe events (disconfirming "the world is extremely dangerous"). PTSD symptoms themselves may begin to be associated with mastery rather than incompetence (disconfirming "I am incompetent").

Pharmacotherapy. Medication is an important treatment option that should be considered for almost all patients with significant symptoms of PTSD. The use of a medication in patients with PTSD may be directed at PTSD symptoms generally, specific PTSD symptoms, common co-occurring symptoms, or at co-morbid conditions (e.g., depression). Initiating a medication trial may occur at different phases in treatment depending on a variety of the patient-specific factors.

Despite the wide use of a variety of medications for the treatment of PTSD, in fact there is a relative lack of definitive evidence for their efficacy (Institute of Medicine 2007). The most thoroughly investigated agents are the selective serotonin reuptake inhibitors (SSRIs). SSRIs

have demonstrated superiority over placebo in large randomized, controlled trials as well as in a number of smaller investigations, and they are now considered the first-line pharmacological treatment option for PTSD (Ballenger et al. 2004).

SSRIs have proven effectiveness for many other anxiety and depressive disorders that are highly co-morbid with PTSD. PTSD and major depression overlap to a considerable degree; both share sleep disturbances, social withdrawal and isolation, decreased pleasure and enjoyment, and impaired concentration. Major depression is the most common co-morbid disorder in patients with PTSD, with close to 50% of PTSD subjects having a history of major depression (Kessler et al., 1995). Although SSRIs improve both PTSD and depression, SSRIs are efficacious for both PTSD patients with and without depression (Stein et al. 2003). Panic disorder and generalized anxiety are also responsive to SSRI treatment and also often co-occur with PTSD (Stein et al. 2000). As with most other disorders treated with antidepressants, a full therapeutic response to SSRIs in PTSD takes 4-6 weeks.

In summary, medications, particularly antidepressants, may reduce the global severity of PTSD symptoms and serve as useful tools in the treatment of PTSD. Psychotropic medications may also be used to treat associated features and/or co-morbid conditions. But the practitioner and the patient must be aware that, with the exception of antidepressants, their use is off-label. Polypharmacy can occur in patients with PTSD in the absence of empirical support (Mellman et al., 2003) and should be avoided.

Maintenance/Relapse prevention. Relatively little is known about rates and processes of relapse after treatment for PTSD. Studies in the civilian section suggest that improvements resulting from use of evidence-based treatments can be maintained for significant periods of time (e.g., Resick, Williams, Orazem, & Gutner, 2005). Some evidence suggests that patients discharging from residential PTSD treatment and referred for outpatient aftercare are more likely to make an outpatient visit within one month of discharge if they receive biweekly telephone calls after discharge (Rosen, Dilandro, Corwin, Drescher, Cooney, & Gusman, 2006). Research also suggests that long-term treatment of PTSD with SSRIs maintains treatment response and quality of life improvements, and that discontinuation of SSRI treatment after 12 weeks results in a greater relapse risk, compared with extended treatment (Davis, Frazier, Williford, & Newell, 2006).

4. Associated problems in PTSD treatment

As noted above, approximately 80% of those diagnosed with PTSD experience concurrent additional mental health disorders (Kessler et al., 1995). In addition, they experience a range of problems in living that are often addressed in treatment. PTSD symptoms are associated with reduced quality of life before treatment and, encouragingly, evidence suggests that change in PTSD is significantly associated with change in quality of life (Schnurr, Hayes, Lunney, McFall, & Uddo, 2006). Most PTSD outcomes research has focused on reduction of PTSD symptoms, so that the impact of treatment on the wider range of quality of life and functional outcomes is less well investigated.

Substance abuse/Addictive behaviors. Co-occurrence of PTSD and substance abuse problems is well documented in populations of civilians and veterans (Ouimette & Brown, 2002; Ruzek, 2002). Some research suggests that veterans with PTSD who also abuse substances will benefit more from substance abuse treatment if they also address PTSD;

patients who received PTSD treatment in the first 3 months following discharge from substance abuse treatment were more likely to be in remission from substance use disorders at follow-up (Ouimette, Moos, & Finney, 2003).

Evidence also suggests that PTSD is associated with increased risk of smoking (Beckham, Kirby, & Feldman, 1997) and that unremitting PTSD is a risk factor for late-onset smoking among individuals who were nonsmokers prior to developing PTSD (Koenen, Hitsman, & Lyons, 2006). Other addictive behaviors may also be associated with PTSD. In civilians seeking treatment for pathological gambling, frequency of PTSD symptoms has been found to predict greater lifetime gambling severity (Ledgerwood & Petry, 2006).

Depression and Suicidality. PTSD is strongly comorbid with depression (Kessler, et al., 1995; Blanchard et al., 1998; Breslau et al., 2000; Yarvis et al., 2005; Yarvis & Schiess, 2008). Presence of PTSD is associated with increased risk of suicide. Sareen, Houlahan, Cox, and Asmundson (2005) used data from the nationally representative National Comorbidity Survey to investigate the relationships between anxiety disorders and suicidal ideation and attempts. PTSD was significantly associated with suicidal ideation and suicide attempts; none of the other anxiety disorders showed such an association. Generally, PTSD in U.S. Army veterans is associated with mortality from external causes, including homicide, suicide, drug overdoses, and unintended injury (Boscarino, 2006). Clinicians treating PTSD should therefore routinely screen for suicidality and remain alert to the need to monitor suicide ideation and provide preventive interventions.

Anxiety. PTSD, itself classified as an anxiety disorder, is highly comorbid with other anxiety disorders, including panic disorder, generalized anxiety disorder, social anxiety disorder, obsessive-compulsive disorder, and phobias.

Anger/Violence. Anger and irritability comprise one of the symptoms of PTSD. Intense anger is commonly part of the presentation of those with PTSD (Novaco & Chemtob, 2002) and is more significant among those whose traumas were experienced during military service (Orth & Wieland, 2006). The volatile anger reactions of their patients can present treatment providers with challenges in establishing therapeutic relationships and in delivering treatment itself. In a study of Australian veterans, anger at intake was the most potent predictor of symptom change (Forbes, Creamer, & Hawthorne, 2003). Anger might interfere with the confrontation with and processing of traumatic memories that can be important in recovery from the disorder (Foa & Rothbaum, 1998); a high level of anger at the beginning of PE treatment interferes with response to treatment (Foa et al., 1995). Anger reduction should often be made an explicit goal of treatment and individuals can be taught skills (e.g., time out/cool down, anger self-monitoring, identifying anger situations, relaxation/breathing, anger discrimination, self-talk, assertion training) to reduce their anger or modify its expression.

Anger problems may also require the provider to assist the veteran in reducing risk of violence. Veterans with PTSD often have ready access to weapons and engage in potentially dangerous firearm-related behaviors (Freeman, Roca, & Kimbrell, 2003), and clinicians should routinely address gun storage and safety issues as part of the treatment process.

Complicated or traumatic bereavement. Many of those deployed to a war zone will be exposed to significant personal losses, and these deaths will often be encountered in traumatic circumstances. Traumatic bereavement can lead to anhedonia and depression and

grief about fallen friends can make social interaction and activity seem pointless. Loss of close comrades and friends in battle is associated with post-war distress and social dysfunction. Treatment for traumatic or complicated grief has received relatively little formal evaluation, but most treatments include education about grief, restructuring of cognitive distortions about events, restoration of positive memories of the deceased, acknowledgment of caring feelings toward those lost, retelling of the story of the death, and help in tolerating painful feelings (e.g., Shear & Frank, 2006). Elements of treatment for PTSD can be adapted for treatment of complicated grief (Ehlers, 2006).

Physical health problems. PTSD is associated with poorer perceived health status, greater somatic complaints, greater number of chronic health problems, and increased levels of health care utilization (Schnurr & Green, 2004a; Kulka et al., 1990; Richardson, Elhai, & Pedlar, 2006; Stapleton, Asmundson, & Woods, 2006; Yarvis et al. 2005, Yarvis & Schiess, 2008). Overall, studies suggest that PTSD mediates the relationship between war zone exposure and physical health for both males and females (e.g., Schnurr & Green, 2004b). The majority of veterans seeking PTSD treatment do not engage in preventive health behaviors (e.g., exercise and medical screening) at levels consistent with health care guidelines (Buckley, Mozley, Bedard, Dewulf, & Greif, 2004), and these issues should be assessed and if necessary, addressed in treatment.

The strong relationships between PTSD and health outcomes extends to Operation Iraqi Freedom returnees (Hoge, Terhakopian, Castro, Messer, & Engel, 2007), and for this population, early severity of physical injury is strongly associated with development of later PTSD or depression (Grieger, Cozza, & Ursano, 2006). Such findings support the need for increasing integration of mental health screening and services in primary care and other medical settings.

Traumatic brain injury. The high rate of co-occurring traumatic brain injury (TBI) and PTSD in those deployed to Iraq and Afghanistan poses clinical challenges that are ill-understood at present. Evidence suggests that PTSD can develop following both mild and severe TBI, even in individuals who have lost consciousness during the event or display post-traumatic amnesia (McMillan, Williams, & Bryant, 2003). In one study of military personnel deployed to Iraq, mild TBI (i.e., concussion) was found to be strongly correlated with PTSD and physical health problems 3 to 4 months after return to the United States, and the relationship between mild TBI and health was largely mediated by PTSD and depression (Hoge, McGurk, Thomas, Cox, Engel, & Castro, 2008). PTSD treatment for those with TBI may need to include modifications that address difficulties that may be associated with injury, including difficulty in retrieving the traumatic memory, comprehending and remembering treatment recommendations, and reporting on symptoms and experience. Bryant, Moulds, and Guthrie (2003) found that civilians diagnosed with mild TBI and ASD could be effectively treated with a brief CBT protocol designed to prevent development of PTSD.

Impaired family functioning. The anger, emotional numbing, and social withdrawal often associated with PTSD can isolate the veteran from his or her family. PTSD veterans and their partners report more problems in their relationships and more difficulties with intimacy (and have taken more steps toward separation and divorce) than veterans without PTSD and their partners; degree of relationship distress is correlated with the severity of veterans'

PTSD symptoms, particularly symptoms of emotional numbing (Riggs, Byrne, Weathers, & Litz, 1998). Emotional numbing symptoms are also correlated with perceived relationship quality with children (Ruscio, Weathers, King, & King, 2002), and higher levels of PTSD symptoms (avoidance and emotional numbing symptoms in particular) may lower parent-child relationship satisfaction (Samper et al., 2004). Men reporting combat as their worst trauma are more likely to be divorced and physically abusive to their spouses than men reporting other traumas as their worst experience (Prigerson, Maciejewski, & Rosenheck, 2001).

A treatment focus on improvement of family functioning would suggest that steps should be taken to more systematically involve spouses/partners in care (Devilly, 2002; Sautter, Lyons, & Manguno-Mire, 2006). Significant others can be included in the assessment process, in the setting of treatment goals, and in treatment itself.

Impaired social functioning. Military-related PTSD is often associated with withdrawal from participation in social activities, limited friendships, and reduced emotional intimacy (Riggs, Byrne, Weathers, & Litz, 1998; Jordan, Marmar, Fairbank, Schlenger, Kulka, Hough, & Weiss, 1992). As noted above, some research suggests that veterans with PTSD have greater rates of Social Anxiety Disorder. Poor social support predicts development of PTSD and a more chronic course of the disorder; veterans with PTSD who are more involved in the community are more likely to show remission in PTSD symptoms than those with less community involvement (Koenen et al., 2003) and adjustment to peacekeeping is significantly related to self-disclosure, especially to supportive significant others (Bolton et al., 2003). Overcoming problems in social functioning and promoting social participation may require active, sustained intervention. When indicated, improvements in social functioning must be established as a formal treatment goal.

Impaired workplace functioning. Evidence indicates that PTSD impairs work performance and reduces work productivity (Kessler & Frank, 1997). It has been suggested that even modest reductions in PTSD symptoms may lead to employment gains, even if the overall symptom levels remain severe (Smith et al., 2005).

Although no interventions to date have targeted the workplace functioning of individuals with PTSD, it would seem useful for clinicians to provide assistance to employed patients in applying stress and anger management skills on the job, and problem-solving difficult situations, to help reduce the impact of traumatic stress reactions on this important domain of functioning.

5. Conclusion

Management of deployment-related PTSD has been changing rapidly. Screening for PTSD is widespread, returning personnel are informed about the disorder, and the Veterans Healthcare Administration and Department of Defense have collaborated to establish practice guidelines for responding to the specific needs of those with PTSD. As treatment systems evolve, it is critical that more and better quality evaluation of treatment effectiveness be undertaken. q The necessity for civilian social workers to be attuned to the nuances of PTSD is imperative. As more and more returning service members are seeking care in the private sector, social workers and other non-government mental health

care providers will be working with those with PTSD and those close to them. Management poses many challenges and understanding both the challenges and approaches to care will benefit service members to better return to civilian life.

6. References

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